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Some Important Virginia Specimens in the National Institution for the Promotion of Science

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History has taught us that early natural history museums were often disbanded and private collections were either lost or later purchased by other individuals or organizations. From those museums and collections, some important records were often lost, but fortunately, in many cases original records still exist for review and study by modern natural historians. Such has been the case for The National Institution for the Promotion of Science.

It was organized in Washington, DC on 15 May 1840 and had as its stated objectives "to promote Science and the Useful Arts, and to establish a National Museum of Natural History, &c., &c." By federal charter granted by Congress in 1842, it was officially known as the National Institute for the Promotion of Science (NIPS), and more or less existed as such until its final dissolution in 1863 (Anonymous, 1971). Joining NIPS was the Columbian Institute in 1841 (donating its "effects, books and papers") and the American Historical Society in 1840. Because of deteriorating interest and dwindling financial support, NIPS gradually transferred its collections to the Smithsonian Institution over a period of time through 1863.

For several years NIPS had oversight over several significant government collections (such as the Wilkes Expedition), these being housed in the Patent Office. This oversight role, coupled with the NIPS program of acquiring collections of natural and physical objects, was probably a model upon which the Smithsonian Institution was planned (Conway, 1995).

Upon its inception the National Institute immediately began an active program to collect specimens of natural history, physical objects of historical interest, and library materials. It initiated correspondence with scientists, scholars, and collectors in the United States and abroad. Over the years a steady stream of specimens and their proper preservation in the Patent Office Building became serious problems, especially because Congress never appropriated funds for NIPS. At first the collections were housed and displayed in the basement, but later, as the collections increased in volume, the first floor was also used.

From its formation until 1846, the Institute published four bulletins, each containing proceedings of stated meetings, which usually took place on a monthly basis. At each meeting, and hence published in the *Bulletin[s] of the Proceedings of the Institute*, lists were provided of donations (1) "For the Cabinet," and (2) "For the Library." As might be expected, donations for the Cabinet included almost every conceivable item, from gold ore and clothing to art objects, Indian artifacts, zoological and botanical specimens, old coins, and fossils. Similarly, the Library donations were old manuscripts, books, and historical papers.

In scanning the lists of biological donations for the Cabinet, as described in the *Bulletins*, I found a number of items from Virginia, previously unknown or unrecognized to modern scientists. Some are of considerable historical importance, as indicated below. The donations are listed here, but it is unlikely that many still exist. Modern names for fossil shells [in brackets] have been provided by Dr. Lauck Ward.

Meeting, 8 November 1841 (Bull. 2, p. 117):

"Living Owl, (*Strix virginiana* [=*Bubo virginianus*, Great Horned Owl])--From Jonathan P. Felt, Spottsylvania County, Virginia."

"Fossils, (*Pectens*) from James River, Virginia.--From Wm. Knowles, Georgetown, D.C."

Meeting, 10 January 1842 (Bull. 2, p. 133):

"Silk Fan, woven by silk worms trained by Miss E. Tutt, of Virginia.--From Dr. Marcus C. Buck, U. S. A."

Meeting, 14 February 1842 (Bull. 3, p. 149):

"Fossils from James River.--From Robert Brown."

"Antlers of Elk (*Cervus canadensis.*)--From Col. Joseph Tuley, of Virginia."

(pp. 171-193):

A lengthy article, "Observations on a Portion of the Atlantic Tertiary Region, with a Description of New Species of Organic Remains," by T. A. Conrad. From the lower Tertiary, he describes a new species of oyster, *Ostrea [=Cubitostrea] sellaeformis*, from the James River, Virginia, a few miles below City Point.

Meeting, 12 September 1842 (Bull. 3, p. 252):

"Fossils...from the foot of Knobby Hill, Virginia.--From Dr. Causten."

(pp. 253-254)

"Box of Fossil Shells, Eocene and Miocene of Virginia.--Presented to the Institute for Exchanges [for recent shells], by Edmund Ruffin, Petersburg, Virginia."

Miocene

Ostrea virginiana [=*Conradostrea sculpturata* (Conrad, 1840)], Coggin's Point

Ostrea disparilis [=*Ostrea raveneliana* (Tuomey & Holmes, 1855)], Gloucester County

Cardita granulata [=*Cyclocardia granulata* (Say, 1824)], Coggin's Point and generally

(2 kinds) Astarte undulata, Coggin's Point and generally

Several species Crepidula, Coggin's Point and Yorktown

Carditamera arata, Coggin's Point

Pectunculus pulvinatus [=*Glycymeris americana* (DeFrance, 1829)], Dinwiddie, Williamsburg

Pectunculus suboratus [=*Costaglycymeris subovata* (Say, 1824)], Prince George

Venus Rileyii (?) [=*Mercenaria corrugata* (Lamarck)], Coggin's Point

Venus tridachnoides [=*Mercenaria corrugata* (Lamarck)], Coggin's Point

odd v. Arca [=*Dallarca* sp.], Hanover, Surrey

Arca incile [=*Noetia incile* (Say, 1824)], Dinwiddie

Arca centenaria [=*Striarca centenaria* (Say, 1824)], Coggin's Point

broken arca(?) [=*Granoarca propatula* (Conrad, 1843)] (large and rare), Ware River in Gloucester

Cytherea Sayana [=*Pitar sayana* (Conrad, 1843)], Yorktown

Lucina anodonta [=*Stewartia anodonta* (Say, 1824)], Prince George

Lucinia crepsaria, Prince George

Lucinia divaricata, Prince George

Plicatula marginata, Coggin's Point

Petricola centenaria, King William

Astrea [=*Septrastrea marylandica* (Conrad, 1841)], Coggin's Point

Dentalium [=probably *D. attenuatum* (Say, 1824)], Coggin's Point

Panopaea [=probably *P. reflexa* (Say, 1824)], Dinwiddie,

Pecten Clintonius [=probably *Placopecten pricepoides* (Emmons, 1858)], Coggin's Point

Pecten septemnarius [=*Chesapecten septemnarius* (Say, 1824)], Coggin's Point

Pecten decemnarius, Coggin's Point

Pecten Jeffersonius [=*Chesapecten jeffersonius* (Say, 1824)], Coggin's Point

Pecten virginianus [=*P. decemnarius*], Coggin's Point

Pecten arboreus [=*Carolinapecten eboreus* (Conrad, 1833)], Coggin's Point

Chama corticosa [=*Pseudochama corticosa* (Conrad, 1833)] Dinwiddie, York, Coggin's Point

Chama congregata, Dinwiddie, York, Coggin's Point

Oliva [=probably *O. canaliculata* (H. C. Lea, 1845)], Coggin's Point

Serpula [=probably *Sepulorbis granifera* (Say, 1824)], Coggin's Point

Spatangus (very rare) [=*Echinocardium orthonotum* (Conrad, 1843)], Prince George

(3 kinds) Fissurella [=*Diadora* sp.], Coggin's Point, Dinwiddie

Artemis acetabulum [=*Dosinia acetabulum* (Conrad, 1832)], Coggin's Point, Dinwiddie

(2 kinds) Turritella, Coggin's Point, Dinwiddie

Fasciolaria mutabilis [=*Scaphella mutabilis* (Conrad, 1834)], Dinwiddie

Venus (?) [=*Mercenaria* sp. ?], Hanover

Natica [=*Polinices* sp.], Dinwiddie

Crassatella marylandica [=*Marvacrassatella undulata* (Say, 1824)], Dinwiddie

Crassatella undulata [=*Marvacrassatella undulata* (Say, 1824)], Coggin's Point

Crassatella melina [=10*Marvacrassatella melinus* (Conrad, 1832)]

Cardium [=*Chesacardium acutilaqueatum* (Conrad, 1839)]

Eocene

Ostrea sellaeformis [=*Cubitostrea sellaeformis* (Conrad, 1832)], Coggin's Point, Hanover, King William on Pamunkey River

Ostrea (new ?), Waterloo on Pamunkey

Ostrea (new ?), Waterloo on Pamunkey

Ostrea compressirostra [=*Ostrea sinuosa* (Rogers & Rogers, 1837)], Evergreen on James River

Ostrea (very heavy) [=*Ostrea sinuosa* (Rogers & Rogers, 1837)], Evergreen

Pecten ?, Coggin's Point

Sundry small Eocene shells from Pamunkey Green Sand Beds.

Meeting, 14 November 1842 (Bull. 3, p. 262):

"*Columba migratoria* [=*Ectopistes migratorius*, Passenger Pigeon] from Virginia--From W. M. and S[pencer]. F. Baird, Carlisle, Pennsylvania." Inasmuch as all records of the Passenger Pigeon from Virginia are important, I searched Spencer Baird's catalog in the Smithsonian Archives, but found no entry for this bird. Perhaps he obtained it in an exchange and did not list it. Hence, we know nothing other than the state and approximate date.

Meeting, 12 December 1842 (Bull. 3, p. 270):

"Box of fossils, &c., from the coal mines near Richmond, Virginia, with a journal of minutes kept in the mine.--From A. S. Wooldridge." ["These would be thin slabs of slate and shale, mainly with impressions of Triassic ferns and cycads. Possibly some fish."--Dr. Lauck Ward]

Meeting, 9 October 1843 (Bull. 3, p. 309-310):

"Box of locusts, (*Cicada septemdecim*)--From Dr. Robert E. Peyton, Fauquier County, Virginia.

"Box, containing Fossils and River Shells...from mouth of Potomac Creek, Virginia; Fossil Shells, Bones, Teeth, and Clay from Stafford or Hollis' Cliff, Virginia...--From J. G. Bruff."

"Specimens of Ovi-Positor of the Cicada septemdecim, and of Branches of Trees in which the Eggs are deposited.--From Robert E. Peyton, Fauquier County, Virginia, to accompany and illustrate his paper on that insect."

Meeting, 11 December 1843 (Bull. 3, p. 322):

"A perfect skin of a large Buck Elk (Cervus americanus).--From Joseph Tuley, Virginia." On p. 331 is mention of correspondence "From Joseph Tuley, Millwood, Virginia, November 14, 1843: Presenting a perfect skin of a fine buck elk, killed in his park, &c."

Meeting, 8 January 1844 (Bull. 3, p. 339):

"Specimens of Tobacco of Lynchburg, Virginia, prepared in two different ways.--From Judge H. W. Garland, Virginia."

Meeting, May 1844 (Bull. 3, p. 347):

"A Bag, containing skin of a Female Elk, from Virginia.--From Joseph Tuley, Virginia."

Meeting, 9 December 1844 (Bull. 3, p. 369):

Two boxes of Minerals, Shells, &c., &c.--From Dr. Frederick A. Davisson," Hillsborough, Loudoun County, Virginia.

In Bulletin 4 (p. 487) is mention of a communication "From Frederick A. Davisson, M. D., Loudon [sic] County, Virginia, February 25, 1846, stating that he has sent to the Institute a box of shells and reptiles, &c., of Virginia."

Donations of library materials from or pertaining to Virginia are few:

Meeting, 14 November 1842 (Bull. 3, p. 264):

"Col. Edmund Scarburg's Expedition from Virginia to Annamessecks and Manokin, pursuant to an act of the General Assembly of Virginia, in 1663--From L. D. Teackle."

Meeting 8 January 1844 (Bull. 3, p. 341):

"Description of new fossil Shells, from the Tertiary of Petersburg, Virginia, by I. Lea, Philadelphia.--From the author."

I have found only two publications alluding to National Institute collections of birds. May Thacher Cooke (1929), in her accumulation of bird records from Washington, DC, and vicinity, showed her knowledge of NIPS records for the Double-crested Cormorant, Surf Scoter, Snow Bunting, and Old-squaw, all deemed by her as "the first records of some of the rarest species on our list." W. L. McAtee (1918), by carefully searching *Bulletin(s) of the Proceedings...*, found other

rare bird records from the Washington area. One was a Yellow Rail (*Ortygometra (=Coturnicops) noveboracensis)*, which was "killed on the Potomac river, opposite Washington" and donated on 14 November 1842 (Bull. 3, p. 320). Research on this record indicates that the location was in Virginia (Johnston, in press).

From the mid-1840s onward, the Smithsonian Institution for the most part replaced the National Institute as a repository for natural history specimens. The Institute, however, apparently continued to receive some bird specimens until its expiration in 1863. For example, existing catalogs in the Bird Division of the National Museum of Natural History ("Smithsonian") show entries of dozens of birds sent from the National Institute or the Patent Office between 1859 and 1863. Most of these birds were from Brazil, Cuba, and other foreign countries, with a few coming from Pennsylvania, Maryland, and Washington, D.C. One of the latter specimens is of interest here: *Actodromas maculata* [=*Calidris melanotos*, the Pectoral Sandpiper] taken in April 1845. Beside the locality of "Washington," someone added to the catalog entry in pencil "Aquia Co., Va.," which is also on the specimen's label. "Aquia" undoubtedly referred to Aquia Creek and not County. The specimen, according to the catalog, was sent "To Chicago Acad. Sci. May 20, 1872. Ret'd in 1919." The specimen is now No. 45642 in the Bird Division, National Museum of Natural History, and probably represents the oldest existing bird specimen from Virginia.

Although the records do not show the state affiliations of the Institute's Resident Members (328 in 1845), the following Virginians were Corresponding Members in 1845. The list shows the wide interest in Virginia's natural history at that time.

Brown, William, M .D., Fredericksburg
Burke, Ethelbert, Mount Gilead, Loudoun Co.
Cocke, Capt. Harrison H., U.S. Navy, Cabin Point
Davisson, F. A., M. D., Hillsborough, Loudoun Co.
Dew, Thomas R., Pres., College of William and Mary
Ellis, Thomas, Richmond
Gardner, Capt. William H., Norfolk
Hardy, J. W., Randolph-Macon College
Harrison, Benjamin, Buckley
Hayden, C. B., Abington
Huger, Capt. Benjamin, Fort Monroe
Kennedy, Commodore E. P., U. S. Navy, Norfolk
Maury, Lieut. M. F., U. S. Navy, Fredericksburg
Minor, B. B., Richmond
Peyton, Robert E., M. D., The Plains, Fauquier Co.
Reynolds, J. C., L. L. D., Richmond
Rogers, Prof. W. B., Virginia State Geologist
Skinner, Charles W., U. S. Navy, Norfolk
Slaughter, Daviel F., Culpepper
Thompson, Robert A., Senate of Virginia
Tucker, George, Prof. of Moral Philosophy, Univ. Virginia
Tuley, Col. Joseph, Clark County
Upshur, Hon. Abel P., Eastville
Warner, Prof. A. L., Richmond
Wheeler, Col., Charlotte, Mecklenburg County
Williamson, Thomas, Norfolk
Wooldridge, A. S., Midlothian (President of the Mid Lothian Mining Co.)

Beginning on 1 April 1844, the Institute held what amounted to an annual meeting or convention in Washington, with sessions held in the Presbyterian Church on 4 1/2 Street and the Unitarian Church near the City Hall. The library hall of the Treasury Department contained a variety of objects of interest and was used during the whole period as a place of reunion and rendezvous.

Meetings were held mornings and evenings through Saturday morning, 6 April, and beginning again on Monday, 8 April, making 10 sessions in all. Two Virginians gave presentations on 2 April: "On the Gulf Stream" by Lieut M. F. Maury, U. S. Navy; "On the Dangers most to be guarded against in the Future Progress of the United States" by George Tucker, Professor of Moral Philosophy, University of Virginia.

The opening address on 1 April was by John Tyler, President of the United States: "Congress, impressed with its importance, has given it a corporate existence..." Even so, the Congress never appropriated any funds for the Institute, and it was this lack of support, plus the emerging Smithsonian Institution with its substantial endowment, that contributed to the demise of the Institute.

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William Cox, Curator at the Smithsonian Archives, kindly helped me locate unpublished material on the National Institute. Dr. Lauck Ward of the Virginia Museum of Natural History supplied modern names for the fossil shells.

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Dendroecological Potential of *Juniperus virginiana* L. Growing on Cliffs in Western Virginia

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[**Note**: The following is an abridged version of a report by the same title prepared during the Fourth Annual North American Dendroecological Fieldweek, 4-11 June, 1993, Mountain Lake Biological Station, Pembroke, Virginia. The work was performed by a group of participants led by Dr. Doug Larson and comprised of Sylvain Archambault, Jaroslav Dobry, Bob Keeland, Jeff Matheson, Kiyomi Morino, David Williams, and Diana Wolfram, all of whom are authors of the original report. This version, condensed by Thomas F. Wieboldt (Massey Herbarium, VPI & SU, Blacksburg, Va.), adheres very closely to the original text. It is abridged with the intent of conveying life history and ecological information of interest to **Banisteria** readers while omitting other details of interest principally to dendrochronologists.]

Exposed limestone cliffs in western Virginia support a sparse forest composed of *Juniperus virginiana* L. (eastern red cedar), a few shrubby angiosperm species and a rich array of pteridophytes, bryophytes and other cryptogams. The structure of this forest superficially resembles that of exposed limestone cliffs of the Niagara Escarpment, southern Ontario, Canada (Larson et al., 1989), where a presettlement forest of stunted *Thuja occidentalis* (arbor-vitae) has been shown to occur (Larson & Kelly, 1992). Kelly et al. (1992) successfully crossdated the slow growing and deformed stems of *T. occidentalis* and demonstrated the dendroecological potential for this cliff species. Given the ecological similarity between cliff habitats in Ontario and Virginia, and the largely mutually exclusive continental distributions of *J. virginiana* and *T. occidentalis*, we decided to explore the dendroecological potential of *Juniperus virginiana* growing on cliffs in the southeastern United States.

Juniperus virginiana has a broad ecological amplitude (Burns & Honkala, 1990); on good sites, growth to 1.0 m diameter at breast height (DBH) and 25 m height can occur in 60 years, while on poor sites, trees ca. 400 years old with DBH < 20 cm and 'height' of 2 m have been found (Butler & Walsh, 1988; Guyette et al., 1980; Guyette et al., 1982). This broad range of growth rate and a generally inverse relationship between longevity and growth rate is similar to that of *T. occidentalis* (Burns & Honkala, 1990; Larson & Kelly, 1992; Archambault & Bergeron, 1992). Maximum longevity of 1032 years in *Thuja* trees less than 20 cm basal diameter and 2 m height has been described, but all such old trees show pronounced strip-bark growth. Mature (>100 yr.) *Thuja* trees occur at a very low density on cliff faces